

CITY OF LOS ANGELES



MANAGEMENT AUDIT

of the

BUREAU OF SANITATION

Department of Public Works

The Bureau of Sanitation of the City of Los Angeles is responsible for the collection, transport, and disposal of solid waste. The Bureau is also responsible for the maintenance of the city's sanitary system. The Bureau is organized into several divisions, including the Division of Collection, the Division of Transport, and the Division of Disposal. The Bureau is headed by the Director of Sanitation, who is appointed by the City Council. The Bureau's budget for 1982 is approximately \$10 million.

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The Management Audit of the Bureau of Sanitation was conducted by the City Administrative Officer, Keith Comrie, and the City Auditor, Leonard G. Foster. The audit was conducted in accordance with the provisions of the City Charter and the City Administrative Code. The audit was completed on May 15, 1982.

Keith Comrie  
City Administrative Officer

Released  
May, 1982



# CITY OF LOS ANGELES

CALIFORNIA

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May 25, 1982

The Honorable Council of the  
City of Los Angeles

The Honorable Tom Bradley  
Mayor of the City of Los Angeles

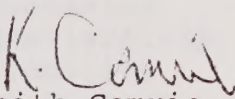
Members of the  
Board of Public Works

Director, Bureau of Sanitation

Transmitted herewith is the Report on the Management Audit of the Bureau of Sanitation. The Audit was initiated in the normal course of events in furtherance of City Charter Section 53 for the purpose of examining operational compliance and evaluating the efficiency and effectiveness of the system.

The Management Audit of the Bureau of Sanitation was supervised under my direction by John R. Coombs, Assistant City Administrative Officer, and Daniel J. McGowan, Chief Administrative Analyst. Members of the Audit Team were Raymond P. Summer, Leonard D. Tupper, Donald W. Ketcham, Jeffrey D. Druyun and James D. Bisetti.

Very truly yours,

  
Keith Comrie  
City Administrative Officer

KC:DJM:ph






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## INTRODUCTION

The Bureau of Sanitation, is one of the seven bureaus of the Department of Public Works. This Bureau collects and disposes of household refuse and dead animals; operates land reclamation sites for the disposal of refuse and acceptable wastes; plans and arranges for design of refuse collection facilities; and plans and designs refuse disposal facilities. It controls the discharge of sewage, industrial wastes and storm waters into sewers, storm drains, open channels and navigable waters; inspects and maintains open storm water channels; maintains, operates and repairs all sanitary sewers, storm drains, culverts and appurtenant structures, such as sewage and storm water pumping plants, and sewer ventilating plants; and operates and maintains sewage treatment plants. Bureau activities are conducted from numerous facilities located throughout the City.

Charter Section 234 establishes the basic legal authority for the operations of the Bureau, providing in part that the Department of Public Works shall be responsible for the maintenance of sewers and storm drains in the City and the disposal of garbage, sewage and street refuse. The Bureau also operates pursuant to the provisions of Articles 4 and 6, Chapter 6 of the Municipal Code, and is subject to regulations adopted by the State Water Resources Control Board.

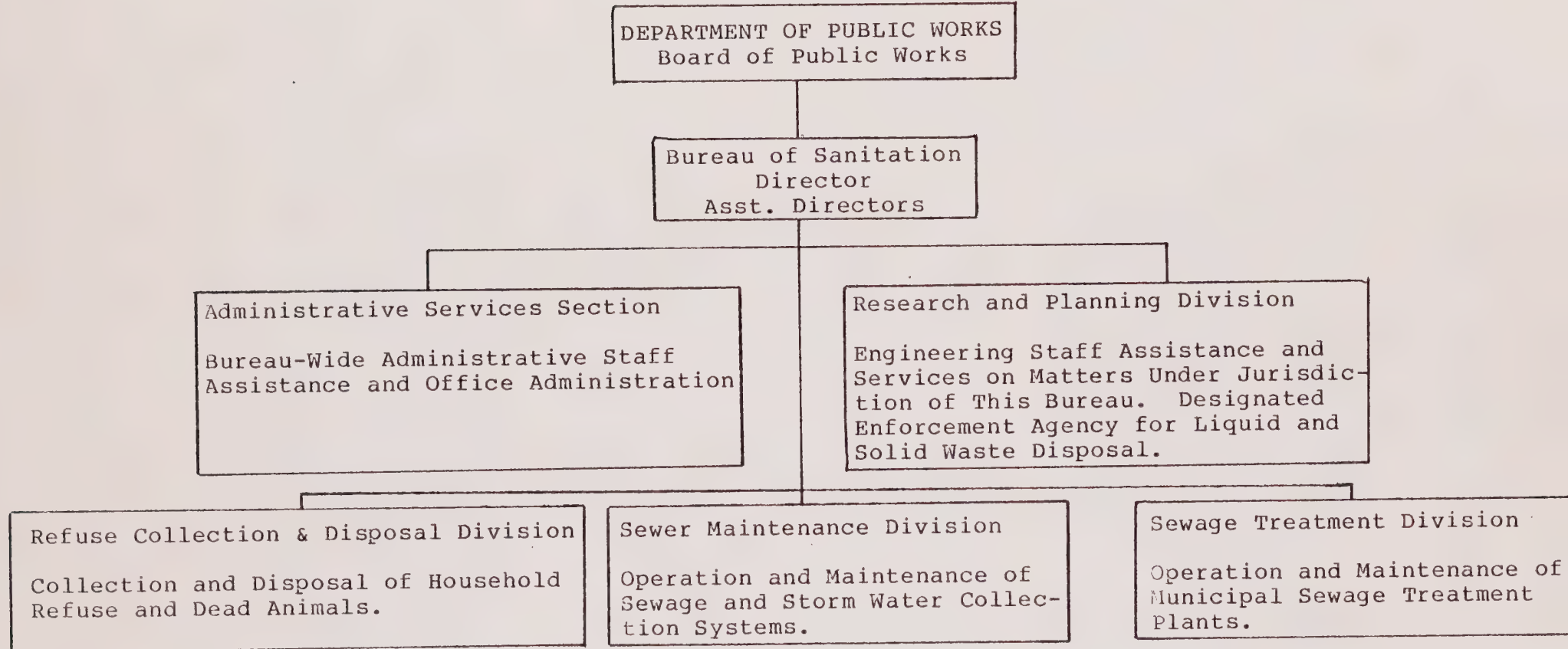
The 1981-82 Budget authorized 1,963 regular positions, and appropriated \$46,316,423. Additional appropriations were included in the budgets of other City departments for the support of the Bureau.

This is the third management audit of the Bureau of Sanitation, and this Office hereby acknowledges the full cooperation of all Bureau personnel, and others, who provided data for the audit.

This report has been reviewed and concurred in by the Director of the Bureau of Sanitation and the President of the Board of Public Works.



BUREAU OF SANITATION ORGANIZATION







## SUMMARY

The Bureau of Sanitation is a well managed organization and to date has continued present levels of service in face of serious fiscal and operating problems.

Household refuse collection workload is increasing. The Palos Verdes landfill closed in 1980 and a series of other refuse disposal sites are anticipated to close in the next few years. Annual costs could rise several million dollars, depending on the available alternatives, including transfer stations, new landfills, and resource recovery facilities. Although the Bureau is considering resource recovery facilities, studies indicate that they may become applicable in the future, but current technology is much more expensive than landfills.

Increased costs are occurring in sewage collection and treatment operations. Cost increases arise both from the age of facilities and from the need for technology and new facilities to meet federal and state requirements for sewage treatment. The City has six thousand miles of main line sewers and three treatment plants. Many parts of the sewer system are over sixty years of age, and the Hyperion Treatment Plant, which processes 95% of City's sewage, does not meet some federal Environmental Protection Agency (EPA) standards. The cost of reconstructing and upgrading the Hyperion Treatment Plant alone will amount to \$220 million, based on the final settlement with EPA over requirements to comply with the Federal Water Pollution Act. Although federal funds may be available for up to 87.5% of treatment plant construction cost, the City will have to bear the majority of replacement sewer and increased operating and maintenance costs. Depending on final EPA requirements, operating costs could increase several million dollars per year.

The three sewage treatment plants at Hyperion, Terminal Island, and Los Angeles-Glendale have been kept operating and are able to accomodate the increasing quantity of waste water although there have been problems in achieving an acceptable level of treatment at the Hyperion and Terminal Island Plants due to overtaxed facilities. Uncertainty as to Federal and State treatment requirements and changes in grant funding requirements has been a factor in delaying repair and replacement work. Maintenance personnel have had to focus on repairing breakdowns and have had little time to perform



preventive and scheduled maintenance. As a result, the Hyperion Plant has deteriorated badly and it will now be necessary to have millions of dollars of work performed by contract.

New computer systems at all three wastewater treatment plants have failed to perform as intended; however, this has not had a serious adverse effect on operations. The Bureau is seeking to modify these systems to improve the reliability. However, the need for these very sophisticated and expensive systems must be re-examined.

Productivity at the Hyperion Plant appears to have suffered from the need to be in a constant emergency repair mode. We observed a negative effect on employee morale, although several positive steps, such as increased repair funding, have helped. Efforts should be continued to motivate employees, including supervisory personnel.

Due to partially completed facilities and heavy waste loads at the Terminal Island Treatment Plant, preventive maintenance is not being performed at specified frequencies by operating personnel, who are diverted to other necessary work. Electrical and mechanical work also is backlogged.

Control of maintenance supplies in the Sewage Treatment Division is inadequate. Stockouts occur, apparently as a result of the lack of usage reporting and established ordering criteria. Implementation of the Materials Management System should resolve this situation.

Work of the Sewer Maintenance Division is being performed well under current operating conditions. Improvements can be made in completing routing systems for sewer maintenance and providing sewer maintenance crews with multipurpose power root cutter tools.

Two of the major problems in refuse collection are the inability to staff an adequate number of trained crews and insufficient refuse collection vehicles so that the optimum number of crews can be fielded each day. Sufficient collection vehicles are not available in district yards on some days to field all refuse collection crews which report for work. Contributing to this shortage is a shortage of mechanics which service refuse vehicles, and this is a serious problem affecting all City departments which are heavily involved in vehicle fleet operations.

The Bureau has a program of replacing two member refuse collection crews with a one member crew at a previously established level of fifty trucks per year. Productivity has increased over the previous years as measured by hours per ton of refuse.





A few refuse collection personnel are performing their regular duties even though a City doctor has recommended to the contrary, thus subjecting themselves to possible injury and the City to possible liability. Other refuse workers and employees injured on the job are not returning to work as soon as possible because there are very few light duty assignments available in the Bureau where these employees could be assigned. At the time of the Audit, the Personnel Department's Rehabilitation program was too new to evaluate, but should have an impact on this problem.

The Research and Planning Division appears to be conscientious in attempting to assure that Bureau operations are done effectively and efficiently. But an increasing workload of conflicting staff and line functions handicap the Division's performance.

High absenteeism in the Bureau of Sanitation due to excessive sick leave usage has resulted in large overtime costs. The greatest amount of sick time used is in the refuse collection.

Significant policy matters are discussed in the addenda of this report. They include action on a new Department of Sanitation and plans for collecting refuse by private collectors. These issues are under separate consideration by the Mayor and the Council and have received a thorough airing on several occasions. Therefore, they are not addressed in the body of this report.



## RECOMMENDATIONS

It is recommended that the Mayor and the City Council:

1. Instruct the City Personnel Department to report on the feasibility of establishing an employment pool within the Personnel Department where employees with temporary or permanent disability could be assigned for light duty work. In the case of temporary disability, they would be assigned to the pool until a permanent employment arrangement has been made, and
2. Instruct the Board of Public Works to authorize the Director of the Bureau of Sanitation, or his designee, to meet with and discuss any legal matters affecting industrial waste at any time such discussions are deemed necessary by the Director, and authorize the Director to revoke discharge permits subject to appeal to the Board.

It is recommended the the Board of Public Works:

3.
  - a. Instruct the Bureau of Management-Employee Services to develop specific guidelines for what constitutes flagrant abuse of sick time, poor attendance, and excessive tardiness; and appropriate discipline therefor. (Although specifically for Sanitation, such guidelines could be implemented in all Bureaus of Public Works).
  - b. Issue written explanations for all decisions the Board renders in disciplinary matters as part of its report to the Bureau of Management-Employee Services and the employee(s) involved.
4. Prior to phasing in one-member collection operation where refuse is now collected from narrow alleys which are not negotiable by one-member trucks, instruct the residents that in the future, refuse containers must be set out adjacent to the front curb for collection.

It is recommended that the Director Bureau of Sanitation:

### Sewage Treatment Division

5.
  - a. Prepare a list of all important maintenance work which must be accomplished to correct existing deficiencies at the sewage treatment plants, and





determine which of these jobs should be done by maintenance section personnel and which should be done by contract. For those jobs to be performed by maintenance personnel, estimate personnel and material requirements.

- b. Prepare a report to Bureau Management on additional resources (either Bureau or contract) that will be required to (1) correct existing deficiencies and (2) establish a preventive and scheduled maintenance program.
  - c. Develop a formal preventive maintenance and scheduled maintenance program at each wastewater treatment plant. Keep records to show when preventive maintenance is scheduled and when it is actually performed.
6.
  - a. Request Sewage Treatment Division management to prepare a report describing in detail the specific adverse effects of not having the additional personnel which the Terminal Island Plant Engineer believes are needed and which craft assistance from Hyperion could be eliminated if these positions are provided.
  - b. Evaluate the report from the Sewage Treatment Division, and if justified request additional staffing for the Terminal Island Plant based on specific identification of need.
7. Request that the Board of Public Works require the Bureau of Engineering to carefully research proposed new facilities for the Sewage Treatment Division and consult more extensively with Sewage Treatment Division personnel during this process.
8. Request the City Director of Materials Management to advise on interim steps that can be taken at Hyperion (and possible other Bureau of Sanitation facilities) to improve inventory control and prepare for the City's new materials management program.
9. Undertake a program to improve the motivation of employees in the Sewage Treatment Division, including training for supervisors in behavioral management and priority merit awards for outstanding service.
10. Request assistance from the Department of General Services in developing a security plan for Hyperion and other facilities where security is inadequate.



Consideration should be given to electronic surveillance, and contract services security officers.

11. Make a cost-benefit evaluation of the plant computer systems located at Terminal Island, Hyperion, and L.A.-Glendale wastewater treatment plants, including the following alternatives:
  - a. Make the computer systems fully operational and provide funds for maintenance.
  - b. Install microprocessors in place of the computer system.
  - c. Install microprocessors in place of the computer system and provide a complete analog back-up system.
12. Request the Bureau of Engineering to provide drafting personnel to up-date the Sewage Treatment Division's "as-built" plans and if this is not successful request temporary position authority for the duration of the updating project.

#### SEWER MAINTENANCE DIVISION

13. Place special emphasis on the completion of all partially completed catch basin and sewer manhole routing systems so that both systems will be available for implementation on a Division-wide basis as soon as possible.
14. Purchase and evaluate the use of multipurpose power root cutter attachments for hydro-flusher machines. We suggest that three cutter attachments be acquired initially, one to be used exclusively by the West Los Angeles district because of the acute root problem there, and the other two to be made available to each of the other Sewer Maintenance districts for a period of several weeks.

#### REFUSE COLLECTION & DISPOSAL DIVISION

15. Request that the General Manager Department of General Services take necessary action to:
  - a. Ensure that sufficient number of mechanical repair and vehicle servicing personnel report for duty in each district yard at the start of the refuse collection shift to assist refuse collection personnel in each district yard in getting RCV's operational.





- b. Determine what the staffing ratio of Equipment Mechanics and Garage Attendants should be to properly repair and maintain the refuse collection fleet in order to provide the daily number of vehicles to ensure most economical refuse collection.
  - c. Evaluate the feasibility of contracting for the City's equipment repair services.
- 16. Instruct the Superintendents in charge of the Refuse Collection and Disposal Division and the Sewer Maintenance Division to jointly develop a plan to provide for a small reserve pool of Maintenance Laborers, in an exempt status, to be available for assignment each morning - on a first priority basis for refuse collection work, and on a second priority basis for sewer maintenance work within existing resources.
- 17. Request the General Manager of the Personnel Department to analyze the Safety Program conducted by the Refuse Collection Division and make specific formal recommendations to the Director of the Bureau of Sanitation as to how this program can be improved. Both training and enforcement procedures should be considered. Follow-up reports on safety program deficiencies should be submitted to the Director of Sanitation at least twice a year.

#### RESEARCH AND PLANNING DIVISION

- 18. Instruct the Research and Planning Division to:
  - a. Review current workloads and determine the proper balance of work in each refuse district by day of the week.
  - b. Request the District Supervisors to revise routes to: (1) correspond to the tonnages for each day of the week as calculated by the Planning and Research Section; (2) equalize the tonnage workload among the sections for each day.
  - c. Spot check the workload balance periodically in each district both by day of the week and by section.
- 19. Place the Refuse Disposal operations under the organizational control of the Research and Planning Division.



20. Increase the current level of staffing in the Research and Planning Division when new major grant programs are undertaken.
21. Insure that the draft Administrative Agreement-Industrial Waste be submitted to the Sewerage Contract Negotiating Committee immediately.
22. Improve the Bureau's Industrial Waste Surcharge billing, auditing and inspection procedures by implementing the following actions:
  - a. Initiate a routine validation program, through spot sampling and analysis, to adjust for possible changes in waste processing industry standards. Identify companies with waste water quality significantly at variance with the industry standards.
  - b. Pursue the possibility of direct access to water billing information from the Department of Water and Power to preclude reliance on field audits and improve the update capability for volume factors of the surcharge.
  - c. Determine the feasibility of instituting a program of random sampling audits to evaluate the self-monitored permittee program.
  - d. Monitor the progress of the Data Service Bureau in their efforts to correct problems in the Industrial Waste Billing System.
  - e. Proceed to implement appropriate procedural changes to allow service stations to be billed a normal flat fee for waste discharge.
  - f. Evaluate the impact of having Department of General Services provide reports on heavy metal treated from wastewater samples in 15 to 21 days.
  - g. Evaluate the rationale of establishing a single enforcement fee to incorporate both inspection and sampling costs when sampling a permittees wastewaters.
23. Direct Bureau personnel meet with the City Attorney as soon as possible to add the required penalties to the City's Industrial Waste rules and regulations.





## PERSONNEL MATTERS

24.
  - a. Set a goal of reducing the amount of employees using 11 plus days sick leave in Refuse Collection in 1982 by 10 percent.
  - b. Consider requiring a doctor's certificate after 1 days absence due to sick leave from any employee in Refuse Collection who has been off due to illness more than 10 working days in the preceeding 12 month period pursuant to L.A.A.C. Section 4.126 (f)
  - c. Consider expanding the "one day - need a doctor's certificate" rule to all other divisions where any employee takes more that 10 days sick leave in a 12 month period. (However, we recommend this program be studied for 6 months in refuse collection to determine its effectiveness before application to other divisions).



## FINDINGS

### Liquid Waste Operations

The Sewage Treatment Division is responsible for the disposal of liquid wastes, and operates three wastewater treatment plants for this purpose. The 1979-80 Budget provides financing for 318 regular positions for this Division.

The Division's main facility is the Hyperion Treatment Plant at Playa Del Rey. Placed into operation in 1950, this plant has a maximum capacity of 420 million gallons per day (MGD). The average daily flow for fiscal year 1978-79 was 347 MGD.

The wastewaters of the City of Los Angeles and some surrounding communities travel to Hyperion through a vast underground pipeline system. Processing results in effluent and digested sludge which are discharged through ocean outfalls into the Santa Monica Bay. All of the wastewater receives primary treatment and approximately 100 million gallons each day receives secondary treatment.

The Division also operates a secondary treatment plant at Terminal Island which serves the San Pedro-Wilmington area of the City. The average flow for fiscal year 1978-79 was 12.7 MGD. This plant is only partly completed at this time, but will ultimately provide secondary treatment for 30 MGD.

The Los Angeles-Glendale Water Reclamation Plant was completed in 1977 and is designed to provide up to 20 MGD of recycled water which can be used for irrigation, industry, recreation and other purposes. The 1978-79 average flow was 8.6 MGD. The City of Glendale pays one-half the operating costs of this plant.

A second water reclamation plant is under construction at Sepulveda. It will relieve the overload on the outfall sewer and provide water for irrigation in the Sepulveda Basin. Its planned capacity is 40 million gallons per day.

### Evaluation of the Sewage Treatment Division

In general, the Sewage Treatment Division has done a good job in treating and disposing of liquid wastes. The three treatment plants have been kept operating and are able





to accomodate the increasing quantity of wastewater, although there have been problems with achieving an acceptable level of treatment at the Hyperion and Terminal Island plants due to inadequate facilities.

Because of delays associated with Federal and State approvals under grant funding regulations, work scheduled to be done as long ago as 1972 has been held in abeyance. Facilities have continued to age and as a consequence maintenance personnel have had to focus on repairing breakdowns and have had little time to perform preventive and scheduled maintenance. As a result, the Hyperion Plant has deteriorated badly and it will now be necessary to have extensive major repair work performed. Because facilities have also expanded regular maintenance crews will have to be expanded to keep the facilities in proper condition in the future. The Terminal Island plant is also not receiving the full amount of maintenance required. The L.A.-Glendale plant is in good condition.

Generally, federal and state requirements have been complied with. The lack of maintenance on processing tanks with difficulties in the delivery of repair parts, has resulted in some being out of service for long periods over the past several years and this has caused the City at times to be in violation of certain treatment standards. Also, the City has been contesting a federal requirement to discontinue placing sludge into the Pacific Ocean since 1977 and this matter has only recently been resolved by a consent decree. Under this agreement, new facilities are to be constructed at Hyperion by 1985 to meet federal requirements. Outside groups are now contesting the consent decree in the courts.

The Terminal Island Plant is currently under a cease and desist order from the State because sewage treatment at this plant has not met State standards due to new and unexpectedly heavy discharge from the fish canneries. Efforts are now being made to deal with this problem.

There have been start-up problems with new facilities at all three plants. This is to be expected to some degree, but the Bureau recognizes that more preliminary design work in concert with the assigned design engineers is required in the future and is working with the Bureau of Engineering in this regard. New process control computer systems at all three plants have failed to perform as intended. This has not had a serious adverse effect on operations, but if changes could be readily made to realize the consistent operation and energy saving potential they would be a very helpful tool. The need for such sophisticated and expensive systems must be re-examined in terms of reliability and the savings potential already mentioned. This situation is detailed below.



Morale at the Hyperion plant is less than desirable. Increased effort should be directed to the motivation of Division employees, including supervisory personnel.

#### Maintenance Program for the Hyperion Plant

##### Issue

There has been no definitive identification of all maintenance work at the Hyperion Treatment Plant which should have been performed by plant personnel on an on-going basis and still remains to be performed by them. Nor have personnel, expense and equipment requirements to perform this work been determined.

##### Discussion

Personnel at all levels at the Hyperion Treatment Plant state that the plant has seriously deteriorated due to lack of sufficient maintenance and that unless corrective action is taken soon there will be problems. This has occurred because the available personnel, materials and equipment to properly maintain the plant have been based upon facilities consistently kept to normal City standards. The difficulties and time required under the Federal grant funding regulations have delayed needed upgrading.

Although Division Management advises the Audit Team that additional personnel, materials and equipment are needed now to maintain the existing plant in a proper manner until such time as new facilities are built, these requirements have not been sufficiently identified and communicated. A more aggressive posture in identifying and seeking justified resources would be to the Bureau's advantage. These same additional personnel will most likely be needed later to maintain the new expanded facilities.

The Bureau has recently requested an appropriation of \$2.5 million for contract work to completely overhaul four of the primary and four of the secondary processing tanks. This request has been approved by the City Council. This will in part correct the current inability of the Hyperion Plant to process the effluent in accordance with State and Federal requirements. However, the \$2.5 million request does not cover all of the work that needs to be done and if the normal replacement of facilities and equipment had not been interrupted by the Federal grant funding problems including litigation, the facilities could have been maintained as they





had in the past. However the need to keep facilities going longer than normal with increasing flows and increases in treatment functions limited the maintenance staff to urgent work. This resulted in a generally poorer overall facilities.

Maintenance work orders are prepared by various operating and maintenance personnel, but these are generally issued to correct breakdowns and other critical situations where the work must be done immediately to keep the plant functioning. It has been the practice not to issue work orders on most non-urgent work because the time period before action would be substantial.

Currently an effort is underway to identify specific deficiencies in existing facilities at Hyperion. This assignment has been given to the Engineering Services Section of the Treatment Division. It should also be determined which of these deficiencies can best be corrected by the Maintenance Section on an on-going basis and which should be performed by contract. Additional personnel, materials, and equipment requirements for the Maintenance Section should be developed by making estimates on the individual jobs which are identified. Maintenance supervisors should participate in this effort because of their ability to identify needed work and to estimate man hours and materials required for their personnel to perform the work. Once this has been accomplished a request to Bureau Management for additional personnel and expense and equipment funds should be prepared.

Finally, the division should proceed to establish a formal preventive maintenance and scheduled maintenance program. Records should be kept on when work is scheduled to be done and when it is actually performed in order to accurately assess the status of the maintenance program. It should be determined whether plant computers should be used in this effort.

The above described procedures should also be followed at the Terminal Island Plant.

#### Recommendation No. 5

That the Director Bureau of Sanitation:

- a. Prepare a list of all important maintenance work which must be accomplished to correct existing deficiencies at the Hyperion Plant, and determine which of these jobs should be done by maintenance section personnel and which should be done by contract. For those jobs to be performed by maintenance personnel, estimate personnel and material requirements.



- b. Prepare a report on additional positions and materials that will be required to (1) correct existing deficiencies and (2) establish a preventive and scheduled maintenance program.
- c. Develop a formal preventive maintenance and scheduled maintenance program at each wastewater treatment plant. Keep records to show when preventive maintenance is scheduled and when it is actually performed.
- d. Also perform items a. and b. above for the Terminal Island plant.

#### Maintenance Program for the Terminal Island Treatment Plant

##### Issue

Preventive maintenance is not being performed at the specified frequencies by operating personnel, and electrical and mechanical work is backlogged.

##### Discussion

Fish canneries located on Terminal Island began discharging their wastes to this plant during the 1977-78 fiscal year. Since the upgraded plant was placed in service in 1977, flows have increased by 25% and waste loadings of suspended solids and other substances have increased by 300%, mostly due to the fish cannery wastes.

The initial staffing of 28 employees did not provide for these dramatic load increases or the required process modifications. Interim processes added at the plant include aerobic sludge digestion, dissolved air flotation thickening, gravity thickening of raw sludge, and polymer conditioning of sludges prior to air drying. Processes modified which also require additional personnel support include chlorination of return activated sludge, polymer conditioning of mixed liquor activated sludge, and the addition of 11 acres of sludge drying beds which resulted in a 600% increase in drying bed operational activities.

Using guidelines prepared by the U.S. Environmental Protection Agency for staffing of Municipal Wastewater Treatment Facilities, the Plant Engineer has calculated a need for a minimum staff of 46 personnel, an increase of 13 positions over the current staffing of 33 positions. The specific adverse effects of not having the additional positions should be identified and transmitted to Bureau Management.





Considerable assistance is provided to the Terminal Island Plant by personnel from Hyperion. A total of 5171 manhours was spent there during the 1979 calendar year. Because of the travel time involved, personnel from Hyperion can only be productive for a few hours upon their arrival. For this reason, it may be preferable to increase Terminal Island staffing and reduce Hyperion assistance in certain crafts where the workload justifies this action.

#### Recommendation No. 6

That the Director Bureau of Sanitation:

- a. Request Sewage Treatment Division management to prepare a report describing in detail the specific adverse effects of not having the additional personnel which the Terminal Island Plant Engineer believes are needed and which craft assistance from Hyperion could be eliminated if these positions are provided.
- b. Evaluate the report from the Sewage Treatment Division, and if justified request additional staffing for the Terminal Island Plant based on specific identification of need.

#### Inventory Control

##### Issue

Control of maintenance supplies in the Sewage Treatment Division is inadequate. Reporting concerning inventory levels and inventory values is non-existent. Stockouts occur, apparently as a result of the lack of usage reporting and established ordering criteria. Many materials are stored at various locations besides the central storeroom and control of access is generally inadequate, increasing the potential for theft.

##### Discussion

The 1974 Management Audit Report and a subsequent report by J. K. Lasser & Co. in 1976 previously identified the inventory control problems at Hyperion. Those still exist as described above.

Although the COINS system was briefly used at Hyperion, it was abandoned reportedly because of the time required to keep up the paperwork and because the information was out-of-date by the time the reports were received. The



Storekeeper has no responsibility to control on-hand balances, usage, or ordering points, and is concerned only with receiving materials and distributing them to the various maintenance and operating units.

It is planned that the City's Director of Materials Management will provide direction and procedures to establish proper inventory control throughout the City, and should be implemented during 1981-82. In the interim, Bureau Management should consult with the Director of Materials Management to determine what interim steps can be taken to improve control and prepare for the new system.

Recommendation No. 8

That the Director Bureau of Sanitation:

Request the City Director of Materials Management to advise on interim steps that can be taken at Hyperion (and possibly other Bureau of Sanitation facilities) to improve inventory control and prepare for the new materials management program.



## PLANT COMPUTER SYSTEMS

### A. Hyperion Computer System

#### Issue

The Hyperion Computer System which cost \$2.8 million in 1977 does not function as intended, and it is questionable whether it is worth the additional cost to make it operational.

#### Discussion

The computer system was designed to perform several basic tasks:

1. Provide computerized information on the operation of plant facilities to the Shift Supervisors who head plant operations and to the other operators. (Also, certain plant equipment was supposed to have been operated remotely by the Shift Superintendent).

The information which is generated is incomplete and unreliable and the computer is often out of service according to the operators. More importantly the operating personnel do not believe the information and capability which the computer would provide is really necessary for them to effectively perform their duties. Shift supervisors now visit each of the operating areas in person to read gauges and determine how things are going, and in addition they talk to the operators by phone at other times to obtain readings and confirm that the operators are on top of the situation. They believe this is adequate as the plant has operated this way for many years.

2. Provide a management information system including a preventive maintenance and scheduled maintenance program.

This system has never been implemented and there are no plans to do so in the near future because there are no personnel available to do the necessary work.

3. Provide the capability to produce various statistical reports for the State and Federal governments.

There is a difference of opinion among Hyperion personnel as to whether the benefit provided by the computer in preparing these reports justifies the cost involved. Word processing equipment could probably do most of the report work now done by the computer more efficiently and at less cost.





No positions have been authorized for computer programming and maintenance but the Division has assigned one Sanitary Engineering Assistant full time and one Instrument Mechanic part time to perform this work. Neither of these people is fully qualified to perform the work involved. In addition, \$75,000 for contract maintenance work is budgeted.

In view of the questionable benefits to be obtained from this computer system and the high cost of maintaining it, it is recommended that a complete cost benefit analysis be made. It should be determined what it will cost to make it function properly and to operate it in the future, as well as what savings can be effected by implementation. Consideration should be given to report preparation using more economical word processing equipment rather than the computer.

#### B. Terminal Island Plant Computer System

##### Issue

The Computer system for the Terminal Island Plant cost about \$1 million and further expansion is planned, yet the system is not reliable with respect to monitoring and performs only a few of the operational functions for which it was designed.

##### Discussion:

The Plant Engineer advises that the computer system is generally not reliable for monitoring plant operations primarily due to problems with field instrumentation. Manual recordings of data are made instead. Some equipment can be operated from the control room using the computer, although this represents a small part of what the computer was intended to do.

A cost benefit analysis is needed to determine whether the advantages of the computer system justify the costs involved in maintaining it.

A full analog backup system comparable to that at Hyperion and L.A.-Glendale should be considered. It would also be desirable to consider the use of microprocessors instead of the computer if an automated system is in fact needed, because the maintenance costs on these are much less.

#### C. L.A.-Glendale Plant Computer System

##### Issue

The computer system for the L.A.-Glendale Treatment Plant cost approximately \$800,000 and has been out of service since September, 1978.



## Discussion

Although the computer system has been down since 1978, the Bureau does not yet know what the problem is or what it will cost to repair it. The Bureau of Engineering advises it was told by the manufacturer that repairs could be made for a maximum of \$4,000, but the Bureau of Sanitation has received conflicting information and is still seeking a firm estimate. The Bureau of Sanitation is also looking into the possibility of obtaining microprocessors to replace the computer system because it believes the long range cost may be less.

The plant is functioning very well without the computer and operating personnel do not seem concerned that it is not in service. There is an analog back-up system which works well and manual recordings are made of data. There is a serious question as to whether an automated system is really needed. The Plant Engineer has indicated he would like the automated system to record alarms and resulting action by operators, so that it could be verified later just what transpired. However, this alone does not seem adequate justification. A cost-benefit analysis should be made.

## Recommendation No. 11

That the Director Bureau of Sanitation:

In cooperation with the Bureau of Engineering, make a cost-benefit evaluation of the following alternatives affecting the plant computer systems located at Terminal Island, Hyperion, and L.A.-Glendale wastewater treatment plants:

- a. Making the computer systems fully operational and provide funds for maintenance.
- b. Installing microprocessors in place of the computer system.
- c. Installing microprocessors in place of the computer system and provide a complete analog back-up system.

## Research for Design of Facilities

### Issue

There are indications that the Bureau of Engineering does not always do sufficient research prior to designing Sewage Treatment Division facilities, necessitating costly adjustments.





## Discussion

Sewage Treatment Division personnel have expressed the opinion that the Bureau of Engineering does not always do enough study and research on projects for sewage treatment. Examples mentioned are (1) the new very large electric pump used to pump effluent out to sea which required a substantial time to function properly; (2) the \$2.8 million Hyperion computer system which has never worked as intended and is almost totally useless in its present condition; (3) problems with other computer systems; and (4) failure to fully consider operating costs and to adequately consult with operating personnel when developing specifications for new equipment and facilities.

This is typical of the situation observed during the Audit where the Bureau of Engineering, with at least ample engineering resources, has dominated the Wastewater area to the apparent exclusion of Sanitation personnel, who must operate the facilities. The balance of resources for Wastewater programs should be examined with a view toward perhaps shifting some planning and engineering staff from Engineering to Sanitation. This should be addressed upon completion of our Management Audit of the Bureau of Engineering.

## Recommendation No. 7

That the Board of Public Works:

Direct the Bureau of Engineering by formal report to consult more extensively with Sewage Treatment Division personnel during this process.

## Productivity Improvement

### Issue

Morale at the Hyperion plant appears low. Some supervisors should increase efforts to motivate their employees. Productivity, while difficult to measure, appears adversely affected.



## Discussion

Employees generally believe the Hyperion Treatment Plant has been allowed to deteriorate and that needed personnel and materials have not been provided. This is at least partially a result of projects delayed due to uncertainties about grant funding as noted earlier. Some supervisors have become discouraged over the former Board of Public Works disciplinary policy and have become less effective supervisors. Some work is taking much longer to complete than in the past.

There is an urgent need to motivate all employees, including supervisory personnel. Bureau management should become personally involved in this effort. It is suggested that training in behavioral management (how to motivate employees) be provided to supervisors as soon as possible. All personnel must understand what is expected of them and supervisors must convey a genuine interest in seeing that necessary work is accomplished in a timely manner. A program to reward employees for outstanding service should be established.

The situation is better at the Terminal Island and Glendale plants, but the same techniques should be applied there.

## Recommendation No. 9

That the Director Bureau of Sanitation:

Undertake a program to improve the motivation of employees in the Sewage Treatment Division, including training for supervisors in behavioral management and merit awards for outstanding service.

## As-Built Plans

### Issue

"As-built" plans for the Hyperion plant and other facilities have not been kept up to date over the years. There have been instances where plant modifications were adversely affected by the lack of adequate "as-built" engineering plans.

## Discussion

This problem was identified in the 1974 Management Audit Report. There is currently one drafting position at Hyperion Plant but this employee is only able to spend part



time on updating the as-builts and little progress has been made. The Bureau of Engineering has informally agreed to provide personnel to do this work but so far none has been made available.

#### Recommendation No. 12

That the Director Bureau of Sanitation:

Formally request the Bureau of Engineering to provide drafting personnel to up-date the Sewage Treatment Division's "as-built" plans and if this is not successful request temporary position authority for the duration of the updating project.

#### Hyperion Plant Security

##### Issue

There have been incidents of vandalism and children playing around dangerous facilities on the grounds of the Hyperion Plant, thus creating a potential liability on the part of the City. There have also been instances of City property being stolen.

##### Discussion

There is currently only one position of Security Officer at Hyperion Plant. This position is supervised by the Maintenance Section and normally works from 4 p.m. to midnight. During the day there is no guard at either of the plant's two entrances, and the public can enter without being challenged. At night the gates are locked but children can enter by climbing fences if they desire. A security survey of the plant was made by the LAPD several years ago and it recommended that additional security officers be used as well as increasing the height of the fence surrounding the plant from 5 ft. to 10 ft. with barbed wire.

A security plan should be developed with assistance from the Department of General Services. Consideration should be given to electronic apparatus that would be much more economical than additional security officers or a security service via a contract.

#### Recommendation No. 10

That the Director Bureau of Sanitation:

Request assistance from the Department of General Services in developing a security plan for Hyperion and other facilities where security is inadequate. Consideration should be given to electronic surveillance.





## SEWER MAINTENANCE DIVISION

The Sewer Maintenance Division operates, repairs and maintains all sanitary sewers, storm drains, culverts, and appurtenant structures such as sewage and storm water pumping plants and sewer ventilating plants, and inspects and maintains open storm water channels.

Pipeline Maintenance, the largest Section in the Division, is responsible for ensuring that all of the sewer and storm drain systems throughout the City are operating properly, and to maintain and repair those systems. Pipeline crews work out of eight district yards located throughout the City. Division personnel place heavy emphasis on preventive maintenance. Sewer and storm drain systems are inspected continually to ensure that they are always in good condition, and known trouble locations in each of the districts are checked at periodic intervals and necessary work is performed to avoid recurrence of problems previously experienced.

A special system of routing has been developed for most district yards to assist the crews in inspecting and cleaning catch basins. This helps to ensure that no location will be overlooked, and that the work will be done in an efficient manner. A routing system has also been developed for use by sewer inspection crews in some of the geographical districts. Under this system, the sewer inspection crews inspect and record the conditions observed at each manhole in each sewer sub-system in accordance with a prearranged routing. Complete records pertaining to inspection and cleaning performed at each location are prepared by these crews.

Heavy equipment operated by crews assigned to district yards include: hydro-flushers - which clean sewer and storm drain pipes through the use of high pressure water jets, rodding machines - which are large rooter type units for cleaning pipes, and Vac-alls - which are large suction machines used for removing sand, dirt and debris from catch basins. Construction crews in the districts repair or replace portions of existing sewer or storm drain systems when necessary.

There is also a City-wide Unit in the Pipeline Section which cleans and maintains large sewer lines and performs explosive gas testing and insect and rodent abatement work throughout the City. The City-wide crews also operate heavy equipment including large dozers, skiploaders and backhoes. With this equipment they maintain the rights-of-way for large sewer lines, and upon request assist district supervisors in pipeline construction and special project work



throughout the City. One of the City-wide crews operates the Bureau's closed circuit television equipment which is used to videotape sewer and storm drain lines to determine the condition of the pipes and the specific locations of problems.

Personnel in the Storm Drain portion of the Pipeline Section are doing a good job of maintaining the sewer and storm drain systems despite the fact that practically all of the Proposition 13 personnel reductions for the entire Bureau of Sanitation were made in this Section. Twenty-six positions were deleted when Proposition 13 cuts were made in 1978, and further reductions in the personnel were made in the fall of 1979 when the existing CETA program was phased out. The primary impact of these reductions on the operation of the Pipeline Section has been that some of the preventive maintenance work in the districts, including routine sewer inspection work, routine catch basin cleaning, and cleaning of open storm drain channels has been discontinued or curtailed. Less time is now spent on preventive work to forestall future problems, and more time is being spent correcting problems as they occur. However, due to the high degree of flexibility available to district supervisors in making crew assignments, it is not anticipated that the personnel reductions made in the Pipeline Section will cause serious short term problems, although a long term negative effect is inevitable. The overall level of service to the public may be diminished somewhat, but specific work can be performed when necessary by adjusting crew assignments. Special arrangements may be required during the dry season to ensure that all storm related work is finished prior to the fall rains, however. More summer workers may have to be hired, and more of the debris basin cleaning and storm drain channel cleaning may have to be done by contract than in the past years.

The other major organizational unit in the Sewer Maintenance Division is the Mechanical Maintenance and Operation (MM&O) Section. This Section, headquartered at the Dorris Place yard, is responsible for the operation, maintenance and repair of equipment in the Bureau's sewer and storm water pumping plants and ventilating plants, and for the repair of certain other equipment used by the Bureau.

There are 58 sewage pumping plants, 11 storm water pumping plants and two ventilating plants in the system. Electric Pumping Plant Operators periodically check the plants to ensure that they are operating properly, perform routine cleaning of the plants, assist mechanical personnel with plant repairs and do some painting when time allows. Mechanical maintenance and electrical maintenance personnel in MM&O repair and maintain the plant equipment.





MM&O personnel appear to be doing a good job with the resources available to them. However, due to personnel shortages, the pumping plants are not being operated and maintained as well as they should be, and some of the other mechanical repair work - including repair work on vehicular equipment is behind schedule.

A reduction of three positions was made in the MM&O Section under Proposition 13. In addition, the Bureau has experienced difficulty in being able to keep all of the authorized pumping plant operator and maintenance positions filled. This is partly due to the nature of the work, but much of the time is due to prolonged periods of unavailability of personnel in certain job classifications through the civil service system. At the time of the audit, there was one Electric Pumping Plant Operator vacancy, two vacancies in the Mechanical Repairer series, and one Electrician vacancy. Each of the positions had been vacant for about a year. These vacancies and a reduction in Mechanical Helpers due to Proposition 13 cuts have resulted in a deterioration in the condition of the plants. Both the general level of cleanliness and the mechanical condition of the plants has suffered because of this. MM&O's priority listing of mechanical repair jobs recently indicated that there was a backlog of 75 mechanical jobs to be done. Most of this deferred maintenance consisted of mechanical repairs which should have been made in pumping plants. In addition to this, an average of about six items of heavy equipment have continually been out of service at the Dorris Place yard and unavailable for use by district crews because General Services mechanics have not been available to make needed repairs. Routine preventive maintenance work on plant equipment including lubrication of equipment, testing of valves, and repacking of pumps should be done at periodic intervals in order to minimize equipment breakdowns. In the present situation, this work is not being performed, but work is limited to correction of problem situations as they occur in order to keep all equipment in operation.

Division personnel have taken action to alleviate problems caused by unfilled positions. Division management is also actively pursuing arrangements to have pump repair work done by contract. If this proves feasible, it should improve the situation by reducing the workload on City forces.

Procedural improvements have recently been made in keeping maintenance records in MM&O. More complete information is now being made available regarding the mechanical and electrical repairs which are made in the pumping plants. A complete inventory of the quantity and type of equipment in each plant is also being developed. It is anticipated that this will allow for greater flexibility in the utilization of equipment and replacement parts.



The Administrative Services Section in Sewer Maintenance handles personnel and budget matters, office administration and warehouse operations, collects and publishes statistics pertaining to Division operations, and performs other administrative functions. Ongoing projects in Engineering Services include monitoring the performance of catch basin crews, developing a sewer inspection routing system for one of the geographical divisions, and preparation of equipment status reports indicating the extent of the unavailability of equipment due to mechanical repairs. The individual responsible for the Engineering Services work is also currently engaged in the preparation of an operations manual which will set forth the equipment requirements and approved work methods for all functions performed by the Sewer Maintenance Division.

Although the work of the Division is being performed well under current operating conditions, we believe that further improvements can be made. Specific areas with improvement potential are discussed below.

#### Issue

Only a portion of the total benefits attainable through use of the catch basin routing systems and the sewer manhole routing systems are currently being realized because the systems have not been completely developed for all Sewer Maintenance districts.

#### Discussion

Definite benefits have accrued from implementing the routing systems for catch basin inspection and cleaning and sewer manhole inspection and cleaning in those Sewer Maintenance districts where the systems have been developed. One of the primary benefits of the systems is that by following the prescribed routes, none of the catch basins or sewer manholes is overlooked when these routine inspection and cleaning tasks are performed. Additional advantages over the methods previously used include the fact that travel time - and consequently the use of vehicle fuel, can be reduced and productive work increased when the catch basin routing systems are used. Prior to development of the routes, catch basin crew leaders did not always know exactly where all catch basins were located or the order in which they should be cleaned for most efficient operation. Crews would sometimes spend time driving down streets in areas where no catch basins had ever been installed. Advantages of implementing the sewer routing systems in some districts are that higher quality inspections are now made and more complete and accurate



records are prepared pertaining to the work performed at each location. This should provide greater protection for the City in the event of future liability claims.

#### Recommendation No. 13

That the Director Bureau of Sanitation:

Instruct the Senior Methods and Standards Technician in charge of Engineering Services and the district supervisors to place special emphasis on the completion of all partially completed catch basin and sewer manhole routing systems so that both systems will be available for implementation on a Division-wide basis as soon as possible. The district supervisors who are involved should assign one or two qualified persons to spend as much time as possible on the project with assistance and guidance from Engineering Services.

#### Sewer Tool Attachments

##### Issue

Each of the eight Sewer Maintenance districts has a hydro-flusher -- a high velocity sewer cleaning machine, and a crew assigned to operate it, however there are no multipurpose power root cutter attachments for these machines in the Sewer Maintenance Division. It is believed that because these cutter attachments are not used, the productivity of both the hydro-flusher crews and the rodding machine crews is reduced, and the vehicle fuel useage throughout the Division is increased.

##### Discussion

The two basic items of heavy equipment which are used by district crews for cleaning sewer lines are the hydro-flusher -- which cleans the lines using high pressure water jets, and the rodding machine -- which is a large rooter type machine. All districts have hydro-flusher crews, but only five of the eight districts have rodding crews.

The two primary types of obstructions in sewer lines are roots-which grow into the lines, and grease-which builds up inside the the lines. Although a hydro-flusher may be used to initially overcome a stoppage in a sewer line caused by either of these problems, in most instances - if the problem is significant, a rodding machine must then be used to cut out the roots or to completely clear the grease obstruction. After cutting through grease with a rodding machine, hydro-flushers are frequently then used to remove the grease from the lines. When stoppages of this type occur, two





separate crews must be dispatched with their equipment to many of the job sites in order to perform the complete job. The rodding crews sometimes have to travel from one district to another to get to the job site.

Multipurpose power root cutter attachments are designed both to remove small roots and to clear grease obstructions in sewer lines. The cutters are, in effect, rodding machine type attachments for hydro-flushers. It is believed that by equipping hydro-flusher crews with such cutter attachments, in many instances a single crew will be able to handle the complete job of: (1) initially overcoming a stoppage in a line; and then, (2) correcting the cause of the stoppage - by cutting the roots or removing the grease obstruction and flushing the line. This should result in greater productivity for both hydro-flusher and rodding crews and in a reduction in fuel usage by district yards because each of the specialized machines can be operated on regularly scheduled work for a larger portion of each working day, and non-productive travel time between job sites will be minimized.

#### Recommendation No. 14

That the Director Bureau of Sanitation:

Initiate necessary action to purchase and evaluate the use of multipurpose power root cutter attachments for hydro-flusher machines, for evaluation of effectiveness of the device in those areas and potential cost savings which may be achieved.

### SOLID WASTE OPERATIONS

#### Solid Waste Management Alternatives

The technical aspects involved in the collection, processing, and disposition of the City's solid waste complicate the decision making process for Bureau of Sanitation management. Instead of facing single issues involving a choice between several alternatives, Bureau management is faced with resolving problems containing a vast array of interrelating alternatives consisting of cost, environmental factors, conservation of energy, materials, and land, and institutional politics.



Each decision to be made by management, such as a resource recovery proposal which requires residents to separate paper, glass, and metals, the construction of a refuse-transfer station, or the development of a new landfill, involves a systematic analysis of the whole "generation to disposal" solid waste system. The analysis is becoming complicated in that it involves an increasing contact with other governmental agencies and private businesses.

Recent complex studies conducted by the Bureau include: a proposal for the City and County to operate a refuse-transfer station in the Harbor area; an operating agreement with a private firm to handle Harbor area refuse at the firm's refuse-transfer station; a feasibility analysis for establishing a resource-energy recovery facility in the Central City area; proposed action to be taken upon the closure of the Mission Canyon landfill; and a proposed source separation program requiring residents to separate newspapers, glass, and metals.

The Audit Team found that Bureau of Sanitation is managing the City's solid waste program in a commendable manner and is providing reasonable alternatives to the City's decision makers.

#### Refuse Collection

Two of the prime requisites for an effective and efficient refuse collection operation are to have an adequate number of trained crews, and, sufficient refuse collection vehicles available so that the optimum number of crews can be fielded each day.

Although a proper balance of collection personnel and vehicles is sometimes obtained, much of the time there is an imbalance. Cases where overtime represents deliberate scheduling are not a cause for concern. However unscheduled overtime can be disruptive to operations. Since absenteeism is relatively high among refuse collection employees, sufficient personnel are not always available, and with the reduced staffing of Fleet Services mechanical personnel, sufficient refuse collection vehicles (RCV's) are frequently not available at the beginning of the shift. On some days, if an adequate number of collection personnel report for work, trucks may be in short supply and some crews may be "grounded" for lack of vehicles. The reverse of this situation occurs on other days - when the number of trucks is adequate but there





is a shortage of collection personnel to operate the trucks. When either of these situations occurs, the cost of refuse collection increases in that refuse collection district for that day. If there is a shortage of trucks, the "grounded" personnel are being paid even though they have no work to do - at least for part of the day. If there is a shortage of collection personnel, some of the personnel who are on duty will be paid extra for overtime work in order to get all the refuse collected. Overtime payments in the Refuse Collection Division currently amount to approximately \$4 million annually, of which about \$1 million represents payment for holiday work. This amounts to an average cost of overtime in excess of \$15,000 for each collection day.

We believe that changes can be made to improve the current method of operation to ensure that a better balance of personnel and collection vehicles is attained - which will result in a more efficient and effective refuse collection operation. Some suggestions for change are mentioned below.

### Refuse Vehicle Mechanics

#### Issue

Collection crews in some districts are delayed in getting out to their assigned routes in the morning because Fleet Services employees assigned to repair and service the RCV's are not on duty at the start of the refuse collection shift to assist in overcoming minor mechanical problems.

#### Discussion

Collection crews report for work at their district yards at 6:00 a.m. Fleet Services personnel who work at some of yards do not report for work until 7:00 a.m. There frequently are problems with some of the refuse trucks after they have been parked overnite or over a weekend without being used. A common problem in the morning is the difficulty in starting the truck engines. Both the main engines on the RCV's and the auxiliary engines, which furnish power to operate the packing mechanisms, are diesels. Diesel engines are characteristically hard to start and assistance from General Services personnel is frequently necessary. Other minor but troublesome occurrences at the start of the shift include problems with low or dead batteries, and problems with tires - which may have gone flat since the truck was last used. At those locations where the Fleet Services personnel are not on duty until 7:00 a.m., delays in getting these minor problems attended to before leaving the yard in the morning may cause delays of from one to two hours before the collection crews assigned to the vehicles can start on their



routes, and may result in overtime work to finish the routes. In most yards there are no spare trucks available for use at the beginning of the shift. Arrangements should be made to have sufficient Fleet Services personnel available to each Refuse Collection District yard at the beginning of the shift at 6:00 a.m. so as to minimize these early morning delays and reduce collection costs.

#### Recommendation No. 15

That the Director Bureau of Sanitation:

Request that the General Manager Department of General Services take necessary action to ensure that sufficient number of mechanical repair and vehicle servicing personnel report for duty in each district yard at the start of the refuse collection shift to assist refuse collection personnel in each district yard in getting RCV's operational.

#### Refuse Vehicle Availability

##### Issue

Sufficient collection vehicles are not available in the district yards on some days to field all refuse collection crews which report for work. This results in poor utilization of personnel and may require crews to work overtime to complete their routes.

##### Discussion

As previously mentioned, the availability of refuse collection vehicles when needed is one of the critical factors in a refuse collection operation. In most other City operations, if sufficient vehicles are not available on a given day, the completion of the work can usually be postponed without serious consequences. A shortage of vehicles in refuse collection extends the workday and increases the cost of collection because of overtime payments to complete all routes on a specific collection day. A primary cause of the problem is the lack of a consistent vehicle replacement program due to budgetary constraints.

General Services mechanical personnel are assigned to facilities where Sanitation vehicles are repaired and serviced. They attempt to provide the number of vehicles requested by Sanitation personnel but often cannot do this, due to a reduction in the number of positions as a result of Proposition 13 cutbacks, an increase in the size of the Sanitation Fleet due to the phasing in of one-member RCV's, problems of availability of replacement parts, more



time-consuming repair and maintenance tasks required on vehicles acquired in recent years, and, inadequate facilities at some locations to efficiently repair and service the new larger one-member RCV's.

The key factor involved in the problem of vehicle availability is the apparent understaffing of mechanical personnel in General Services. Mechanic staffing has not kept pace with the additional work resulting increased fleet size due to phasing of the one-member trucks. For every 50 two-member trucks replaced, 65 one-member trucks are added to the fleet. When Proposition 13 went into effect in mid-1978, ten Garage Attendant positions were deleted from the Fleet Services Division budget. In addition, there have been continuing vacancies both in Equipment Mechanic and Garage Attendant positions. This frequently makes it impossible to furnish enough collection vehicles each day to minimize the amount of overtime worked by refuse collection crews. Fleet Services management personnel have indicated that considering the mix of collection vehicles currently in inventory and the current operating conditions, the ratio of RCV's to mechanics should probably be lower than it currently is. Another factor contributing to the problem is the fact that no new rear loading packer trucks have been purchased for the last few years. This has resulted in a considerably longer retention period for many of these vehicles than in previous years, and in more out-of-service time for repairs.

Personnel in the Fleet Services Division should review and update the truck-to-mechanic ratio and determine the most appropriate ratio for RCV's considering the current equipment and operating conditions, and request appropriate staffing adjustments. With increased staffing of mechanical personnel, Fleet Services should be able to provide sufficient collection trucks at the district yards. The resulting reduction in overtime payments to refuse collection crews should more than offset the salary payments required for some of the additional Fleet Services personnel.

There has been a shortage of mechanics in the job market for sometime and most City departments have been unable to keep all positions filled. In order to help alleviate this problem, the Police, General Services, and Personnel Departments have implemented a procedure for conducting weekly examinations for Equipment Mechanics. Because of the critical shortage of journeymen mechanics, which some fleet managers now recognize as being nationwide in scope, it appears that the City may have to assume an increasingly greater responsibility for training its own mechanics in future years. Further analysis should be made by the Personnel Department, of the problems currently facing the City in





hiring mechanical personnel. This analysis should include the feasibility of contracting for some of the City's equipment repair services.

#### Recommendation No. 15b

That the Director Bureau of Sanitation:

Request that the General Manager Department of General Services determine what the staffing ratio of Equipment Mechanics and Garage Attendants should be to properly repair and maintain the refuse collection fleet in order to provide the daily number of vehicles to ensure most economical refuse collection. Evaluate the feasibility of contracting for a portion of equipment repair services.

#### Refuse Crew Availability

##### Issue

When all assigned refuse collection crews do not report for duty, the collection routes for the crews on duty are increased in size to ensure that all refuse for the day is collected. This frequently necessitates overtime work which increases the cost of collection.

##### Discussion

Since refuse collection is a non-deferrable activity, it is important that all resources which are planned for are available each day. There must be sufficient vehicles and sufficient collection personnel available at the start of each shift so that the optimum number of routes can be worked and collection costs minimized. When scheduled work crews do not report for work, the workload of the existing crew is increased for that day.

In the Sewer Maintenance Division of the Bureau, there is certain non-deferrable work of a seasonal nature which must be done. All Sewer Maintenance positions which had previously been allocated for the channel cleaning function were deleted in the 1978 Proposition 13 cutbacks. However, the cleaning and repairing of the water courses and debris basins must be done at some time during the dry season either by City employees or by private contract firms.

Unplanned absences of Maintenance Laborers occur both in the Refuse Collection and Disposal Division and in the Sewer Maintenance Division in the Bureau of Sanitation. In order to minimize the adverse effect of these unplanned absences which frequently result in overtime work and



increased refuse collection costs, it is suggested that a small reserve pool of Maintenance Laborers in an exempt status be established within the Bureau. The first priority for assignment of employees from the reserve pool each day should be for refuse collection work. Those Maintenance Laborers not needed for refuse collection would then be assigned to work in the Bureau's Sewer Maintenance Division - possibly to replace absent members in regular Sewer Maintenance crews on that day, or to perform required seasonal work cleaning drainage channels or debris basins.

#### Recommendation No. 16

That the Director Bureau of Sanitation:

Instruct the Superintendents in charge of the Refuse Collection and Disposal Division and the Sewer Maintenance Division to jointly develop a plan to provide for a small reserve pool of Maintenance Laborers in an exempt status to be available for assignment each morning - on a first priority basis for refuse collection work, and on a second priority basis for sewer maintenance work within existing resources.

#### Eliminating Alley Pickup

##### Issue

The Bureau is in the process of switching from two-member rear loading refuse collection vehicles to one-member side loading vehicles. In several areas of the City where alley collections are now made, the alleys are too narrow or the corners too restrictive for one-member vehicles to effectively operate, but one-member vehicles can operate satisfactorily in the streets of most of these areas.

##### Discussion

Refuse is collected both from streets and from alleys in various parts of the City. Many alleys are wide enough for either type of vehicle to operate. Collecting from alleys with rear loading packer trucks usually has not posed a problem because the trucks have been able to maneuver through the alleys satisfactorily. Very narrow alleys in some parts of the City cannot be satisfactorily negotiated by the new one-member collection vehicles which are longer than the rear loading vehicles. However, in most of these areas, the refuse can easily be picked up at lower cost by one-member crews if the residents would set out their containers on the curb adjacent to the street rather than in the alley.





#### Recommendation No. 4

That the Board of Public Works:

Prior to phasing in the one-member collection operation where refuse is now collected from narrow alleys which are not negotiable by one-member trucks, instruct the residents that in the future refuse containers must be set out adjacent to the front curb for collection.

#### One Member vs. Two Member Collection Crews

Until recently, rear loading collection vehicles (RCV's) and two-member crews were used by the Refuse Collection and Disposal Division for the all residential collection in the City. The Bureau of Sanitation initiated a pilot program in November, 1975 to ascertain the feasibility of using side loading vehicles operated by one-member crews.

The pilot program proved to be very successful. The acceptance of the one-member operation by collection crews and field supervisors has generally been favorable and several advantages have been noted with this new method of collection over the two-member operation. The program is being expanded each year. Currently, approximately 45% of the RCV fleet are one-member vehicles. Bureau management plans to continue to expand the operation within the next few years to the point where approximately 80 percent of the fleet will be one-member vehicles. Some of the smaller rear-loading packer trucks will be kept for use in some hilly areas and in other areas which cannot be negotiated readily by the one-member vehicles.

Advantages of the one-member operation include: more tonnage collected per employee per day, lower collection costs, and a lower injury rate.

Operating data relating to the refuse collection operation which have been accumulated for Fiscal Year 1979-80 indicate the following comparison between the one-member and two member crews:

	One-Member Crew	Two-Member Crew
Tons/Crew/Day	10.2	12.5
Paid Employee Hours/Ton	.805	1.510



## Safety Program

### Issue

The total number of injuries in refuse collection has increased significantly in the past few years and time lost has increased accordingly.

### Discussion

In the 1973-74 fiscal year there were 629 injuries reported in Refuse Collection. In the 1978-79 fiscal year the number of injuries increased to 1,037 although the number of employees was about the same. Total days lost increased from 4,634 to 9,372. The lost time has leveled off in recent years. Changes in both the Workers' Compensation law and City form in 1975 may have contributed to increase usage.

The Occupational Safety Office of the City Personnel Department monitors safety practices and safety training in refuse collection. Over the past three months they have made extensive observations and have noted hundreds of incidents of unsafe practices by refuse workers. Refuse trucks were involved in 47 percent of the City's vehicle accidents where employees were injured (excluding Police and Fire sworn personnel). The City's safety engineers believe that the current training activities are not adequate and that supervisors are not insisting that safety procedures be followed.

### Recommendation No. 17

Continue to work with the Occupational Safety Office to analyze and improve the Refuse Collection Division Safety Program.

## Balancing Workloads

### Issue

Work assignments in some refuse collection districts are not adequately balanced. This results in unequal workload for some crews and in overtime that could be reduced.

### Discussion

The workload (tons collected) at some refuse collection districts varies significantly between days of the week and between sections on the same days of the week. It appears that more attention should be given to balancing the workload so that personnel have about the same amount of tonnage to collect each day and so that the amount of overtime used can be reduced.



For example, at the North Central District during the period June 2 to June 17, 1980, the average tonnage collected by the five sections varied between days of the week as follows:

	<u>Avg. Tons</u>	<u>Avg. O.T. Hrs.</u>
Mondays	919.3	115.8
Tuesdays	966.3	254.3
Wednesdays	838.5	63.0
Thursdays	993.7	273.9
Fridays	946.6	267.2

The spread between the lowest tonnage day (Wednesday) and the highest tonnage day (Thursday) was 155.2 tons. Average overtime on the low tonnage day was 63 hours while on the high tonnage day it was 274 hours.

During the same period, the average tonnage collected varied between sections as follows:

<u>Day of Week</u>	<u>Low Tonnage Section</u>	<u>High Tonnage Section</u>	<u>Spread in Tons</u>
Mondays	170.9	212.0	41.1
Tuesdays	183.0	217.0	34.0
Wednesdays	149.6	180.6	31.0
Thursdays	191.1	211.8	20.7
Fridays	172.2	202.1	29.9

The sections with the highest tonnage on a particular day generally have the greatest amount of overtime for that day. We therefore believe that a better balance of the workload by section and by day of the week should result in less overtime being used.

From time-to-time, personnel in the Research and Planning Division have worked with personnel in the Refuse Collection and Disposal Division in readjusting workloads in districts by day of the week. However, they do not regularly monitor workloads by section within the districts.

#### Recommendation No. 18

That the Director Bureau of Sanitation:

28. a. Instruct the Research and Planning Division to review current workloads and determine the proper balance of work at each district by day





of the week - taking into consideration all known data that will affect workloads in the foreseeable future.

- b. Instruct the District Supervisors to revise routes to: (1) correspond to the tonnages for each day of the week as calculated by the Planning and Research Section; (2) equalize the tonnage workload among the sections for each day.
- c. Instruct Research and Planning personnel to spot check the workload balance periodically in each district both by day of the week and by section and coordinate with Refuse Collection personnel whenever the tonnage figures indicate that adjustments should be made.

### Alternative Work for Injured Personnel

#### Issue

A few Refuse Collection employees are performing regular duties despite City doctor's recommendations to the contrary. Other employees injured on the job are not returning to work as soon as possible because there are very few light duty assignments available in the Bureau.

#### Discussion

Refuse collection supervisors are required by a Board of Public Works policy to permit some employees to perform their regular duties after a City doctor has determined this would not be desirable for medical reasons.

The Board order adopted August 9, 1978 states that the heads of the Bureaus of the Department of Public Works must not "remove an employee from working because of a medical report from the Personnel Department for injury until after the matter has been discussed by you with your respective Liaison Commissioner". We are told that the Liaison Commissioners do not want to discuss these cases until such time as the bureau heads have made every effort to work out a suitable alternative course of action for the employee such as a light duty assignment, a lateral transfer to a different job, rehabilitation training, or application for a disability pension if qualified. This often takes a long period of time. We are also told the Board ultimately makes every effort to avoid terminating an employee who wishes to continue performing his old job even though this may involve liability to the City. A representative of the City Attorney's Office advises that management has the right to ignore the



recommendation of the City doctor in these cases, but that there is a strong likelihood of significant liability to the City if the employee is injured again. It is the City Attorney's opinion that Bureau management could not be held personally liable, however.

Some refuse workers and other employees injured on the job are not returning to work as soon as possible because there are no light duty assignments available which they could perform until they have fully recovered. Some City departments have been successful in identifying light duty jobs and placing employees with disability problems in them for a period of time; other departments have not been so successful.

The fact that employees receive 90 percent of their salaries, on a tax free basis, while on temporary disability has been a further deterrent to fast recovery. It has been previously recommended by this Office that the amount of this compensation be reduced to the same take home pay as received when working.

We believe there is a need for the City Personnel Department to assume primary responsibility for the placement of both temporarily and permanently disabled employees into appropriate light duty assignments somewhere in the City. The Personnel Department should also assume primary responsibility for assisting employees with permanent disability to find suitable permanent employment either within or outside of the City. Primary responsibility is now with the appointing authority, with the Personnel Department assisting as needed. We believe it would be desirable to establish an employment pool for temporary light duty workers in the Personnel Department.

#### Recommendation No. 1

That the Mayor and City Council:

Instruct the City Personnel Department to report on the feasibility of establishing an employment pool within the Personnel Department where employees with temporary or permanent disability could be assigned for light duty work.

#### Refuse Disposal Unit

##### Issue

Bureau management expressed concern over the organizational alignment of the Refuse Collection (land fill) Unit.





## Discussion

The Refuse Disposal Unit is presently part of the Refuse Collection and Disposal Division. The entire operation, as the name implies, is responsible for disposal of household refuse collected by the City and the refuse delivered by such municipal operations as street maintenance, recreation and parks, etc. Refuse disposal operations are now centered at Lopez Canyon and Toyon Canyon land fills. Staffing at each facility consists of one equipment supervisor, equipment operators, maintenance laborers and gardener caretakers. Operations at the active landfill sites involve spreading and compacting the refuse discharge from City vehicles. At the closed landfill sites, maintenance operations involve leveling, and ground and landscape maintenance.

As indicated in another portion of this report, engineers in Research and Planning provide the necessary designs for removal of and placement of fill, roadways, drainage, and more recently manpower and equipment studies.

Historically, refuse disposal has had an on going working relationship with Refuse Collection and the Research and Planning Division. As existing land fills are approaching design capacity, there appears to be a need for greater coordination of Planning and Research and Disposal activity. Further, should a new disposal method be required in the future (transfer stations or resource recovery), the disposal operation will need to be drastically modified. This could best be accomplished if greater control could be provided by Research and Planning.

## Recommendation No. 19

That the Director Bureau of Sanitation:

Place the Refuse Disposal operations under the control of the Research and Planning.



## RESEARCH AND PLANNING DIVISION

The Research and Planning Division of the Bureau of Sanitation provides the bureau management and other operating divisions within the bureau with such staff services as engineering and design, research and planning, and general analysis and investigation of problems. In addition to providing such staff services, the division includes the industrial waste control section which is responsible for enforcing the rules of the Board of Public Works, the regulations of the Municipal Code state and federal requirements governing the discharge of industrial waste into sewers, storm drains and water courses under the jurisdiction of the City of Los Angeles. Staffing for the entire division consists of 67 positions, 37 of which are dedicated to the industrial waste control operations. The remainder perform the function of planning and research.

The operations conducted by the Division consists of a mix of staff functions and line activities. For instance, the division provides engineering work and analysis for problems and issues relative to solid waste collection and disposal, technical work associated with new ordinances and regulations affecting industrial waste discharges, data processing coordination for the bureau's various statistical programs and the industrial waste billing systems involving quantity and quality surcharges and environmental impact analysis and review. In addition, the division is actively involved in the management of federal grants which are investigating new resource recovery ideas and determining its applicability to conditions in the Southern California area.

The combination of staff and line activities creates significant demands on division personnel. There have been no increases in staff in this division at a time when responsibilities have increased. Further, the mix of line and staff responsibilities creates significant constraints on where individuals are able to spend their time. It appears that this will be a growing problem as more line problems develop requiring immediate attention in the area of industrial waste control, sanitary land fills, and refuse collection and disposal problems. New sewerage treatment plants to be constructed under the guidance of the Bureau of Engineering will create demands on the research and planning staff regarding start up and problem solving.

A growing workload without an increased staff results in some problems not receiving as much time and attention as they deserve. When sufficient time is not



available to thoroughly evaluate problems, causes, effects, and alternative solutions, the most pressing must be addressed first and others must be delayed until time is available. The constraints of grant deadlines, application submittal dates, and grant timetables appear to be reducing the amount of time available to solve gas migration problems, industrial waste control problems and examine alternatives necessary to solve other operating problems.

It may not be advisable for the bureau, and this division in particular, to perform the initial feasibility studies, original research and other studies required by grant funded projects. These functions decrease the resources available to solve operating problems.

### Line and Staff Conflict

#### Issue

The Research and Planning Division, while basically a research group for management, supervises the industrial waste control field operations and operates the Industrial Waste Billing System. Further, it performs a number of other functions that are akin to line operations.

#### Discussion

Organization theory recommends the separation of line and staff operations. However, the research and planning division appears to be able to perform the sometime conflicting staff and line functions without undue difficulty except for an apparent shortage of time. The mixing of staff and line responsibilities keeps staff planners in tune with practical needs of line operations and also enables the consideration of more sophisticated alternatives to line problems. Except for the conflict that appears to occur between grant programs and research and the general problem solving that occurs in research and planning, the staff-line mixture of duties is not creating undue hardships.

Personnel in the Research and Planning Division appear to be conscientious and attempt to insure that bureau operations are done effectively and efficiently.

Review of various research reports, studies and other projects conducted by bureau staff indicate that bureau personnel are cost conscious and have examined various alternatives to problems under consideration with heavy emphasis on cost control and solutions that are both effective and environmentally acceptable. One such study was the need for a transfer station in the harbor district for refuse





collection. Closure of the Palos Verdes landfill required a longer haul to Toyon Canyon in Griffith Park. Longer hauls mean less time could be devoted to collection of refuse and more spent in driving to disposal sites. The research study and feasibility study for the development of a transfer station considered the various costs likely to be incurred with great detail and indicated to the audit team the cost conscious and environmental concerns of bureau staff. The Bureau contracted with a private transfer operator to handle Harbor refuse when it was unable to build a transfer station.

Staff within the Research and Planning Division is assigned to assist other divisions with operating problems. At the time of the audit, several persons were on loan from Research and Planning to assist the Sewerage Treatment Division with day to day operational problems at the Terminal Island and Hyperion treatment plants. The exchange of personnel from a staff agency to a line operation appears to work well. This is not a normal practice in City government but one which is desirable to reduce costs and share expertise. The bureau should be commended for this type of personnel management.

#### Recommendation No. 20

That the Director Bureau of Sanitation:

Insure that no further major grant programs are undertaken without increasing the current level of employment (or appropriate consultant resources) in the Research and Planning Division.

#### City and County Duplication

##### Issue

There are industrial and commercial firms within the City of Los Angeles and within the County of Los Angeles which are inspected by both City and County industrial waste inspectors and pay fees to the two agencies for industrial waste discharge permits.

##### Discussion

Due to the geographic location of City and County sewers, there are firms in the City and the County which discharge industrial and commercial wastes to the sewer system of the agency in which they are not located. As a consequence, these firms may be required to obtain permits, be inspected, and pay duplicate fees to both the County and the City. The audit team understands that the current duplication



is limited to some jurisdictional overlap between the County Engineers - Industrial Waste Office and the City's Industrial Waste Division.

A working agreement was drawn up by the staff of the Research and Planning Division but has not been submitted to the City's Sewerage Contract Negotiating Committee. It is the understanding of this Office that any agreement between the City and another public agency must first be reviewed and approved by the Negotiating Committee.

#### Recommendation No. 21

That the Director, Bureau of Sanitation:

Insure that the draft Administrative Agreement-Industrial Waste is submitted to the Sewerage Contract Negotiating Committee immediately.

#### Industrial Waste Penalties

##### Issue

The City of Los Angeles must implement a program whereby industrial wastes must be treated by industrial concerns before those wastes are discharged into the City's sewerage system. Part of that program requires the City to incorporate in its rules penalties for non-compliance.

##### Discussion

In a letter dated November 16, 1979, the Bureau indicated to the California Regional Water Quality Control Board that the City has adopted the majority of the requirements for a pretreatment program with the exception of providing for injunctive relief for non-compliance. Presently, the only remedy available to the City under its rules and regulations is the revocation of the discharge permit.

#### Recommendation No. 23

That the Director, Bureau of Sanitation:

Direct Bureau personnel meet with the City Attorney as soon as possible to add the required penalties to the City's Industrial Waste rules and regulations.





## Authority for Enforcement

### Issue

The authority to enforce industrial waste violations is not clearly delineated between the Bureau, Board of Public Works, and City Attorney.

### Discussion

Division inspection personnel enforce the various discharge requirements of the City, State, and Federal government by requiring that commercial and industrial dischargers obtain City permits and by inspecting the permitted locations periodically to ascertain if the discharges are in accordance with the City regulations. Samples of the discharge are taken by bureau inspectors and are chemically analyzed by General Services Department to determine pH (acidity) level and concentration of metal salts. Inspections of privately operated sanitary landfills are also conducted.

The majority of permittees appear to be cooperative with the spirit and intent of City, State and Federal discharge requirements. A few have not been cooperative. In such cases, notices of violation are issued to the discharger, and follow-up inspections are conducted to monitor the progress being made. If inadequate or no corrective action is undertaken, another notice of violation could be issued and a hearing scheduled with the City Attorney prior to revoking the permit. This hearing sometimes results in a change of attitude and compliance. If compliance does not occur, the permit can be revoked by the Director of the Bureau, subject to appeal to the Board of Public Works. The Board may sustain or overrule the Director's action or recommendation.

Heretofore, the Board of Public Works, as the head of the Department of Public Works, has reserved to itself the authority to initiate "request for prosecution" to the City Attorney. As a result, neither Bureau management or inspection staff could initiate a direct request for prosecution to the City Attorney. This reservation is within the Board's authority. However, the lack of permit revocation for cause and/or lack of prosecution has caused significant enforcement problems and weakens the effectiveness of the industrial waste control program because:

- (1) overruling or postponing revocation decisions for long periods of time create an impression (in the minds of the inspectors) that the department head does not believe the violation is serious and such impressions can lessen employee performance and initiative.



- (2) those in the particular industry, sensing that the City will "drag its feet on tough (revocation) decisions" could purposefully delay spending money to improve or purchase pollution control equipment or change procedures further frustrating inspectors and their efforts to obtain compliance.
- (3) and finally, the public relations value (derived from a revocation or prosecution of a violator) that could do much to warn other violators or potential violators of the City's commitment to achieving compliance is lost.

Notwithstanding the action of the Board of Public Works, the City Attorney could, as a continuation of any office hearing conducted by his hearing examiners, monitor the compliance being made by a permittee and determine if sufficient progress toward compliance is occurring. If little or no progress occurs, the City Attorney could initiate whatever legal action is available or desirable. Such action could occur without the approval or request of the Board of Public Works.

During the course of this audit, it was determined that few hearings were requested and no referrals for prosecution were made by the Bureau and the Board of Public Works. This was apparently due to the following:

- (1) little or no working relationship between the Bureau, Board and City Attorney;
- (2) lack of clear guidelines from the Attorney on what prosecution remedies were open to the City, (i.e., can the City Attorney prosecute a discharger under Federal or State statutes, and what is required from inspection to sustain a cause of action, etc.);
- (3) lack of penalties in the City's rules and regulations governing industrial discharges into municipal sewer system;
- (4) previous contacts between the Bureau and the City Attorney or pronouncements to Bureau personnel by the Board that could have caused misunderstandings.

Other City departments such as Building and Safety, City Clerk (Tax and Permit), Fire, Police, Animal Regulation, etc., have established at least an understanding with the City Attorney about referrals of violations. Such an understanding must also occur between the Bureau of Sanitation, the Board and the City Attorney. The management of the Bureau, the



president of the Board of Public Works, and the City Attorney, as a consequence of the closure of Capri Pumping Service, were discussing how such a working relationship could be established when this report was being prepared.

There are numerous ways to improve the relationship between these agencies. All begin with a mutual respect and concern for one another. The City Attorney could establish new internal procedures to transfer the office hearing follow-up duties to his prosecution units, and thus obviating the need for any action by the Board of Public Works. The Bureau personnel could informally seek advice from the prosecutors on difficult enforcement cases and such contact would serve to 'notify' the Attorney of the need for assistance. However, the best possible relationship would occur if the Board were to authorize by Resolution, that the Director or his designee shall meet with and discuss with the City Attorney any and all matters affecting industrial waste discharges under the Bureau's control. Through such discussions, each problem could be thoroughly analyzed and the most appropriate solution to the specific problem identified. Lacking such Board authorization, other measures would be necessary. Ordinances may need to be prepared to define certain new responsibilities of the Board and the Director, whereby, the City Council could officially delegate permit issuance and revocation responsibilities to the Director. Another alternative would involve the creation of a new department - the Department of Sanitation to perform the functions now assigned to the Bureau. This concept is discussed in the addendum to this report.

On February 4, 1981, the Board of Public Works took an action delegating significant authority to the Director, Bureau of Sanitation, and improving industrial waste procedures. This report therefore contains no recommendation.

#### Review of Industrial Waste Surcharge Procedures

We completed a review of the Bureau's billing, auditing and inspection procedures associated with the industrial waste quality surcharge, established as part of an overall program to protect the City's sanitary sewer system and recoup the cost of processing industrial wastewater in excess of domestic strength waste. In general, our findings indicate the Bureau has established adequate safeguards to insure equity and objectivity in administering the surcharge program. Findings and recommendations follow.

Surcharge revenue for 1979-80 is presently estimated at \$2.08 million, collectible on a quarterly basis. The surcharge is applied to four thousand industrial waste





permittees, according to formulae which account for the quality and volume of waste discharged. Companies which discharge less than 40,000 gallons/day are surcharged according to established industry-wide averages for quality along with a record of metered water supply as a measure of wastewater volume. Those which discharge more are on a self-monitoring program whereby they periodically report the actual volume and quality of their wastewater for calculation of the surcharge. A handful of companies which discharge less than 40,000 gallons/day but are considered unique because of their waste process, are also self-monitored. Self-monitored operations number only two percent of the permittees, but account for 55% of the surcharge revenue.

### Issues

- a. Industry-wide averages used to calculate the quality surcharge factor for most permittees have not been updated since they were established in 1971. A routine validation program should be initiated through spot sampling and analysis to adjust for possible changes in waste processing and identify companies with wastewater quality significantly at variance with the industry standards.
- b. The surcharge factor for wastewater volume is generally calculated as a percentage of metered water supply. Field personnel are to check water bills during routine on-site inspections at least once each year, and recommend adjustments to the volume billing factor if water use has changed appreciably (+15%). This is not always accomplished. The calculations of each water bill audit should be reported as documentation of the review for supervisors, and as an update for the surcharge program. The Bureau should pursue the possibility of direct access to water billing information from the Department of Water and Power to preclude reliance on field audits and improve the update capability for volume factors of the surcharge.
- c. Self-monitored permittees have their wastewater analyzed by independent State licensed labs, or do it themselves if properly equipped and staffed. The Bureau relies substantially on this self-monitored reporting, and normally audits test results only when they are clearly out of line based on trend analyses of historical data.



The revenue potential from self-monitored permittees warrants a more aggressive program of random sampling audits and split sampling. The cost-effectiveness of extending the audit program should be evaluated through a series of sampling audits.

Surcharge adjustments are initiated in the field or by the office staff as changes in wastewater quality or flow are identified. A sufficient review procedure is in place to insure that all factor changes are appropriate and are properly documented.

Pursuant to our field work and interviews concerning the surcharge, a number of related issues surfaced which are summarized below.

- d. Resources programmed for engineering research and field inspections have been diverted to reconcile the variety of persistent problems with the industrial waste surcharge billing system. Data Service Bureau staff has advised that corrections to the system would likely be delayed for some time due to an overwhelming backlog of projects. We have discussed this matter with the General Manager, DSB in terms of its impact on the Sanitation Bureau workload and the adverse reaction of business owners affected by system errors. The Bureau should monitor the results of this effort.
- e. The Bureau staff has noted that substantial time and money could be saved for the City if service stations were surcharged on a flat fee basis annually, in advance. Service stations comprise 21% of the surcharge permittees, but account for only 4.7% of the revenue. They also account for 23% of all permit revocations issued due to non-payment of fees. The average quarterly surcharge fee for service stations is \$20.98, which if collected on a flat fee basis annually would save the effort of calculating separate charges and invoicing quarterly. Advance billing would reduce the number of uncollectibles resulting from frequent ownership turnover. Bureau staff should proceed to implement appropriate procedural changes allowable under the present surcharge ordinance, and document proposed ordinance changes for consideration by management.
- f. Reports on heavy metals tested for the Department of General Services from wastewater samples, are transmitted to the field inspectors two months after



the sample is taken. The delay is an obstacle to effective follow-up. At our request, staff at Standards has agreed to a trial procedure whereby test results showing excess metals in wastewater will be provided within 15-21 days. Sanitation Bureau staff should evaluate the impact this five week reduction in processing time has on field effectiveness.

- g. The Municipal Code requires a fee (\$65) whenever a permittee's wastewater is sampled for analysis as part of the enforcement program. However, the fee is by administrative fiat being applied only when a permittee's wastewater is shown to exceed the City's limits on various metal and chemical characteristics. The rationale for this discrepancy should be documented as the basis for considering a change to the Code. Perhaps a single enforcement fee should incorporate both inspection and sampling costs.

#### Recommendation No. 22

That the Director Bureau of Sanitation:

Improve the Bureau's Industrial Waste Surcharge billing, auditing and inspection procedures by implementing the following actions:

- a. Initiate a routine validation program, through spot sampling and analysis, to adjust for possible changes in waste processing industry standards. Identify companies with wastewater quality significantly at variance with the industry standards.
- b. Pursue the possibility of direct access to water billing information from the Department of Water and Power to preclude reliance on field audits and improve the update capability for volume factors of the surcharge.
- c. Determine the feasibility of instituting an aggressive program of random sampling audits to evaluate the self-monitored permittee program.
- d. Monitor the progress of the Data Service Bureau in its efforts to correct problems in the Industrial Waste Billing System.





- e. Proceed to implement appropriate procedural changes to allow service stations to be billed a normal flat fee for waste discharge.
- f. Evaluate the impact of having the Department of General Services, provide reports on heavy metal treated from wastewater samples in 15 to 21 days.
- g. Evaluate the rationale of establishing a single enforcement fee to incorporate both inspection and sampling costs when sampling a permittee's wastewater.

### Personnel Matters

#### Discipline

##### Issue

Discipline was a serious problem in the Bureau of Sanitation during the audit. Prior Board of Public Works policies and practices had a negative effect on operations and supervisory morale. The Board has changed several policies and practices, and has demonstrated a commendable attitude of support for management.

##### Discussion

During the course of the management audit, we performed an extensive study of the Board of Public Works role in employee disciplinary matters. Recommendations were developed, and several of these became moot in view of actions taken by the Board after a change of membership.

The current Board's policies, practices and attitudes appear to be appropriate. However some improvements are possible in the development of guidelines in the area of attendance. Written explanations of Board disciplinary decisions would provide useful feedbacks to both management and employees.

#### Recommendation No. 3

That the Board of Public Works:

- a. Instruct the Bureau of Management/Employee Services to develop specific guidelines for what constitutes flagrant abuse of sick time, poor attendance, and excessive tardiness; and, appropriate punishment therefor.



- b. Issue written explanations for all decisions it renders in disciplinary matters as part of its report to the Bureau of Management-Employee Services and the employee(s) involved.

#### Sick Leave Usage in Refuse Collection

##### Issue

High absenteeism in the Bureau of Sanitation due to excessive sick leave usage has resulted in large overtime costs. The greatest amount of sick time used is in refuse collection.

##### Discussion

The two exhibits below illustrate the amount of sick leave used in Sanitation's various divisions in two ways. Exhibit 1 indicates the number of employees taking sick days in refuse collection only during calendar years 1978 and 1979. As a point of comparison, the total number of employees in all other divisions taking any sick days during 1979 is shown in parenthesis under calendar year 1979.



Exhibit 1

Refuse Collection Sick Leave Usage\*

<u>No. of Sick Days</u>	<u>1978</u>		<u>1979**</u>	
	<u>No. of Employees</u>	<u>% of Total</u>	<u>No. of Employees</u>	<u>% of Total</u>
0	73	6.7	87	7.5
1 to 10	312	28.5	371	32.2
11 to 20	380	34.7	415	36.0
21 to 30	191	17.4	172	14.8
30+	<u>139</u>	<u>12.7</u>	<u>110</u>	<u>9.5</u>
	<u>1,095</u>	<u>100.0%</u>	<u>1,155</u>	<u>100.0%</u>

(600)-employees in  
all other  
divisions

\* - excludes CETA

\*\* - most recent data available at time of Audit field work.

Focusing on Exhibit 1, note that in calendar 1979 approximately 60.3 percent of all refuse collection workers took 11 or more days of sick time, including 24.3 percent using 21 or more days. Although no criteria exist per se, it appears to this Office that sick leave in excess of two working weeks per year by such a large percentage of the work force is excessive.

Exhibit 2 expresses sick leave usage in terms of days and hours lost, and indicates total usage in the entire Bureau rather than refuse collection only. This chart is more effective in illustrating the severity of the problem since it describes sick leave for what it really is, "lost productivity time."





Exhibit 2

Days/Hours Lost in Sick Leave-1979\*

<u>Division</u>	<u>Days **</u>	<u>Hours</u>	<u>% of Total</u>
Departmental Administration	258.50	2,068	0.93
Refuse Collection	18,934.25	151,474	68.84
Refuse Disposal	260.87	2,087	0.94
Sewer Maintenance	3,727.62	29,821	13.55
Terminal Island	367.62	2,941	1.33
Hyperion Treatment Plant	3,335.25	26,682	12.12
LA-Glendale Reclm.	292.50	2,340	1.06
Industrial Waste	<u>324.12</u>	<u>2,593</u>	<u>1.17</u>
	<u>27,500.73</u>	<u>220,006</u>	<u>99.94%</u>

(less than 100.0  
due to rounding)

\* - excludes CETA employees

\*\* - based on 8 hr. workday

What should concern Bureau of Sanitation management most about Exhibit 2 is it indicates for calendar 1979 that refuse collection employees lost a total of 18,934.25 days in productivity to sick leave while the remainder of the Bureau lost a total of 8,566.48 days. Refuse collection accounted for 68.84 percent of the total productive time lost.

Bureau management has indicated that attempts are being made to control this large use of sick time through employee counseling, and by enforcing the Administrative Code section that requires a doctor's certificate where three consecutive days are lost due to illness.

These efforts notwithstanding, further improvement is needed. This is clearly illustrated by Exhibit 1 which shows that in calendar 1978, 64.8 percent of all refuse collection employees used 11 or more days of sick leave as compared to 60.3 percent in 1979, a reduction of only 4.5 percent.



Recommendation No. 24

That the Director Bureau of Sanitation:

- a. Set a goal of reducing the number of employees using 11 plus days of sick leave in Refuse Collection in 1982 by 10 percent. Goal setting makes the application of more stringent scrutiny of doctor's certificates appear to have a definite purpose, and gives Bureau management and staff a sense of accomplishment if the goal is reached.
- b. Consider requiring a doctor's certificate after 1 days absence due to sick leave from any employee in refuse collection who has been off due to illness more than 10 working days in the preceeding 12 month period. This is permitted pursuant to L.A.A.C. Section 4.126(f).
- c. Consider expanding the "one day - need a doctor's certificate" rule to all other divisions where any employee takes more than 10 days sick leave in a 12 month period. (However, we recommend this program be studied for 6 months in refuse collection to determine its effectiveness before application to other divisions).



## ADDENDUM

### ORGANIZATIONAL ALTERNATIVES AFFECTING SANITATION

#### ACTIVITIES IN THE CITY

Significant organizational changes were considered by the City Council during the course of our audit of the Bureau of Sanitation. They are discussed in addendum format since each concerns broad policy questions of the Bureau's organization and financing rather than specific activities.

No recommendations are presented with these addenda since City Council action has already occurred or is pending. Rather, the addenda are intended to serve as a backdrop for the reader in evaluating the specific recommendations contained in the main body of the audit report.





## ADDENDUM I

### SEPARATE DEPARTMENT OF SANITATION

The impetus for consolidating the City's collection and waste disposal activities arose from two different sources. The July, 1977 City Administrative Officers, Management Audit Report of the Department of Public Works, recommended that street litter and debris clean up, lot clearing and cleaning, and maintenance of street trees and parkway landscaping, now performed by the Bureau of Street Maintenance, be transferred along with existing Bureau of Sanitation functions to a new Sanitation Department. Such a consolidation, the audit noted, would provide for better coordination and more efficiency in the City's waste disposal operations.

The Council's Planning and Environment Committee was simultaneously investigating the handling of toxic wastes in the City. The Committee report referenced the management audit recommendation for the establishment of a separate Department of Sanitation in order to provide for better management of all aspects of waste disposal, including toxic waste.

Subsequently, the City Administrative Officer was requested to prepare a separate report on the feasibility of a separate department for the Committee meeting scheduled October 14, 1980. After further discussion, the Committee on October 21, 1980, instructed the City Administrative Officer to submit an additional report on the "composition of...and the documents necessary" to establish the new department. That report was discussed by the Committee on December 9, 1980 and the recommendation for a separate Department of Sanitation approved. The Committee did modify the original recommendation of the City Administrative Officer however, to exclude those Street Maintenance functions recommended in the management audit for consolidation into the new department. The Committee noted that it would be more efficient to establish a separate Department of Sanitation, eventually transferring all other waste collection activities to the new department.

Finally, the City Council on December 18, 1980 adopted the recommendation of the Planning and Environmental Committee for a separate Department of Sanitation and the City Administrative Officer was instructed to develop the necessary ordinances. The matter is pending.





## ADDENDUM II

### PRIVATE WASTE COLLECTION

On February 20, 1980, a Task Force comprised of the Chief Legislative Analyst, City Administrative Officer, City Attorney, and a representative of the Board of Public Works released a report entitled "Feasibility Study on Alternatives to Refuse Collection by City Forces". This Task Force resulted from a resolution introduced by Councilmen Ferraro and Gibson. The Task Force considered three alternatives: franchise, contracting the entire system, and contracting part of the system.

The report discussed the advantages and disadvantages of each of the alternatives concluding that the City might realize substantial savings from "getting out of the trash collection business". However, disadvantages included: loss of control over waste collection activities, possible layoff of sanitation employees, and concern that private trash collection services would provide uninterrupted service.

The Task Force did not consider putting waste collection activities on a "utility basis". In the utility concept, revenues are dedicated specifically to activities which generate them. The "utility" approach is substantially in effect for wastewater programs via the sewer service and connection charges. It has the advantage of not being a financial drain on the City's general funds, and may in fact return funds to the City. In effect, the "utility" approach would put Sanitation activities on a business basis similar to water and power service.

The Task Force also did not consider implementation of a trash collection fee in order to provide sufficient revenues to fund waste collection activities. The report did note, however, that many municipalities in the Los Angeles metropolitan area (i.e., Inglewood, Long Beach, Pasadena, Torrance, etc.) already have a refuse collection fee.

The Task Force report was received and filed on October 28, 1980. At the same time, however, the Council approved a pilot project in one Councilmanic District (Seven) in which bids would be solicited from private firms in order to set up a contract arrangement for the collection of solid wastes. Further action at the time of the Audit was pending review of bids recently received from private firms expressing interest in obtaining such a contract.

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